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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ROY, SIKHA

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 06/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/473,176

Applicant(s)

FELDMAN, ALAN STUART

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

The Amendment (Paper # 6), filed on March 18, 2002, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-35 and new claims 36-59 have been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of claim 36 reciting voltage source associated with each of the electrodes configured to produce an activation voltage must be shown or the feature(s) canceled from the claim(s). In addition the limitation of claim 58 reciting a semitransparent layer applied to at least a portion of the enclosure to block radiation of predetermined length must be shown or the feature(s) canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 36-38,40,41,44 - 47, 49 - 52, 54 - 57 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 5,343,116 to Winsor.

Referring to claims 36 and 54, Winsor discloses (column 2 lines 48-62 Fig. 1) a planar fluorescent lamp comprising an enclosure formed of a pair of side walls 18 and 20 and a pair of end walls 14 and 16. A plurality of divider walls 26 extend from the sidewall 14 towards the sidewall 16 but do not touch it. Similarly the divider walls 28 extend from the sidewall 16 towards the sidewall 14 but do not contact it. These divider walls create channels, each channel having two ends towards the two end walls 14 and 16. A plurality of electrodes (38a- 38c, 40a- 40c Fig. 4) is positioned adjacent each sidewall and at two ends of the channel segments (column 3 lines 24-33). Winsor further teaches (column 4 lines 58-69 Figs. 3 and 4) AC power is provided to sidewall electrodes in pairs , AC power supply 42 is connected between terminals 56 and 66 to drive electrodes 38a and 40a. It is noted (column 1 lines 58-60, Fig. 4) that the sidewall electrodes extend generally from one divider wall to the other divider wall so that the first end (towards the top wall 16) of adjacent first channel and second channel segments coincide in a common electrode area 40a, 40b and the second end (towards the bottom wall 14) of adjacent first and second channel segments coincide in a common electrode area 38a, 38b.

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Referring to claim 37, Winsor discloses (column 2 lines 60,61) the interior (divider) walls 26, 28 inside the enclosure defining the channel (path) through the discharge chamber.

Referring to claim 38, Winsor discloses (column 3 lines 39-41) a reflective film applied to the bottom plate of the planar fluorescent lamp to increase the light output.

Referring to claims 40 and 41 the fluorescent lamp further includes a phosphor layer within the sealed chamber such that the UV radiation emitted by plasma arc directly impinges on the phosphor layer (column 8 lines 67,68, column 9 lines 1,2).

Regarding claims 44 and 45 Winsor discloses (column 8, lines 66-68, column 9 lines 1,2 claim 4) the channel includes activation material (mercury vapor gas) forming electric plasma emitting UV light.

Referring to claims 46 and 47 Winsor discloses (column 2 lines 60,61) that the plurality of the divider walls in the flat (planar) fluorescent lamp defines a serpentine channel (path) through the discharge chamber.

Referring to claim 49 Winsor notes (column 5 line 4) that hot cathode or thermionic filament can be used as electrodes.

Referring to claim 50 Winsor teaches (column 3 lines 17-23, Fig 3) AC power source 34 used to provide power for the electrodes.

Referring to claim 51 Winsor notes that DC power source can be used to raise the electrode to desired temperature.

Regarding claims 52 and 56 it is evident from Fig.1 that channel segments are equal in length and are configured in parallel.

Regarding claims 55 and 57 Fig. 1 discloses channel comprising seven conjoined channel segments configured along six parallel paths. The channel comprising two electrodes has three conjoined channel segments and two parallel paths. Therefore in general channel comprises n conjoined channel segments, n being greater than two, configured along m parallel paths, m being greater than one.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39, 43 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 6,218,776 to Cull et al.

Regarding claim 39, Winsor does not exemplify the reflective material comprising aluminum and ceramic.

Cull et al. In analogous art of flat fluorescent lamp disclose (column 6 lines 55,56, claim 20) reflective material selected from a group consisting of aluminum and ceramics. It is well known in the art to use aluminum and ceramics as reflecting material for their good reflecting property.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the reflective material of the enclosure of Winsor from a group consisting of aluminum and ceramic as taught by Cull et al. for their reflecting property which would enhance the brightness of the lamp.

Regarding claim 43 Cull et al. disclose (column 3 lines 29-32) rare earth phosphors used as fluorescent material that produces light upon bombardment of ultraviolet radiation.

Regarding claim 48 Winsor ('116) does not disclose the portion of the channel formed by the divider walls having asymmetric cross section.

Cull et al. in analogous art of flat fluorescent lamp disclose (column 4 lines 9-20) in Figs. 3D-E the diffuse channels having cross section that is asymmetrical and a channel wall formed such that the top portion tapers inward toward the diffuse channel cavity. It is further noted that this type of design yields a concentrated cone of light corresponding to a desired range of viewable angles.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the serpentine channels of Winsor's lamp by the one having asymmetrical cross section as taught by Cull et al. for yielding a concentrated cone of light corresponding to a desired range of viewable angles.

Claims 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 5,818,164 to Winsor.

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Claim 42 differ from Winsor ('116) in that Winsor ('116) does not exemplify the lid partially coated with fluorescent material, positioned opposite to the base and attached to exterior wall

Winsor ('164) in analogous art of fluorescent lamp with electrode housing discloses (column 3 lines 35-37, column 4 lines 14-17 Fig. 2) a transparent lid (cover 50) on the lamp body mating to the upper edges of the side walls and end wall positioned opposite to the bottom end. The lower surface of the lid (cover) is coated with fluorescent layer so that light is emitted from the top.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the top end of the flat lamp of Winsor ('116) by a transparent lid coated with fluorescent material as taught by Winsor ('164) for increasing the light output.

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 5,903,096 to Winsor ('096).

Winsor does not disclose the interior walls being flared at each end to increase uniformity.

Winsor ('096) in relevant art of luminescent lamp disclose (column 3 lines 59-67, column 4 lines 1-3 Figs. 2A,3) the distal end of each channel wall (guide member) comprising flares (angled fins) designed to guide the plasma discharge toward a central portion of the serpentine channel to provide more uniform light.

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Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the interior walls of the lamp of Winsor by flared ends as suggested by Winsor ('096) for providing more uniform light.

Claims 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 5,602,444 to Jansma.

Regarding claims 58 and 59 Winsor does not disclose a semitransparent layer applied to a portion of the enclosure to block ultraviolet radiation.

Jansma in pertinent art of fluorescent lamp disclose (column 1 lines 57-60, column 2 lines 26-35 Fig. 1) the inner surface of the discharge fluorescent lamp 10 is provided with an ultraviolet reflecting barrier layer 14. Jansma further notes that this layer beneficially reflects UV light back leading to more efficient production of visible light.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify a portion of the enclosure of Winsor by a layer which reflects ultraviolet radiation for more efficient production of visible light.

Response to Arguments

Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879


ASHOK PATEL
PRIMARY EXAMINER